

🔗 How to Think Concept Selection.ipynb

Nobody that I've met has had a great answer to how to get a mapping from problems to solve to concepts and frameworks, where their intuition brings the most salient, information-full frameworks and concepts to mind as soon as they encounter a problem. This is definitely how my brain seems to work and so training this intentionally would lead to great outcomes. Here's to an experiment in systematizing thought.

Models Master List (Letting Things Blow Up)

Behavioral Economics / Psychology

1. Prospect Theory
 - a. Reference Dependence
 - b. Loss / Risk / Uncertainty Aversion
2. Growth vs Fixed Mindset
3. System 1 / System 2
4. Goal Factoring
5. Ego (Positional Negotiation)
6. Prevention Focus vs Promotion Focus
7. Identify Aversive Factors
8. Exposure Therapy
9. Inferential Distance
10. Steelman each idea
11. Groupthink
12. Confirmation Biases
13. Reciprocation
14. Narrative Fallacy
15. Availability Bias
16. Reciprocation
17. Social Proof
18. Liking (Similarity, Compliments, Growing Together)
19. Commitment and Consistency (Cognitive Dissonance, Sour Grapes)
20. Authority
21. Alignment / Misalignment
22. Halo Effect
23. Placebo Effect
24. Self-fulfilling prophecy

Economics

1. Incentives
2. Opportunity Cost (Necessity of trade-offs)

3. Marginal Value
4. Supply Demand (Scarcity, scarce resources)
5. Diminishing Marginal Returns
6. Option Value (Value in Exploration)
7. Comparative Advantage / Specialization
8. Equilibrium (Individual vs. System Wide incentives)
9. Hyperbolic Discounting
10. Deadweight Loss (Resource Misallocation)
11. Elasticity (First derivative, response magnitude of supply/demand to changing price)
12. Tragedy of the Commons (Free Rider Problem)
13. Externalities
14. Moral Hazard / Principal Agent Problem
15. Expected Value
16. Arbitrage

Mathematics

1. Check Derivative and Second Derivative, not just Objective Function
2. Linear vs. Nonlinear Models (Especially Exponentials)
3. Principal Component Analysis
4. Tree Structure (Graphical Structure)
5. Binary / Discrete vs. Continuous

Statistics

1. Conditional Probability / Bayes Rule (Make sure to condition, don't use aggregate probability)
2. Power Law Distribution vs Normal Distribution
3. Outliers
4. Law of Large Numbers (Poker style optimal play)
5. Mean Regression
6. Bias / Variance

Biology

1. Evolution
2. Natural Selection
3. Memes

Physics

1. Critical Mass

2. First Principles Foundational Thought (As opposed to metaphorical thought)

Chemistry

1. Dose Dependence / Hormesis
2. Catalyst
3. Activation Energy

Philosophy

1. Consider the Meta Level
2. Abstraction
3. Consequentialism (Teleology) vs. Deontology
4. Problem of Induction / Empiricism
5. Values Framework
6. Simplicity (Occam's Razor)
7. Map / Territory
8. Teleology

Engineering

1. Bottleneck
2. Backup System
3. Positive / Negative Feedback
4. Curate

Heuristics

1. What would I think if I was another type of person? Different Identity?
2. Habits
3. Environment as Main Determinant of Behavior (Social and Physical)
4. Assume that some options are eliminated
5. When we consider the best and worst states, what context do we think exists?
6. Which dogs didn't bark (what did I expect to see that did not exist?)
7. Frog in boiling water (what slow changes are impacting the system?)
8. Tight / Aggressive approach to decisions (Focus tradeoff)
9. Pareto Principle (80/20 rule, Curate, Triage)
10. No Brainer (Do the Obvious Thing)
11. Maslow's Hammer (The tools you have determine the solutions you see)
12. Invert

History

1. When has this problem or approach been tried or solved in the past?

Sociology

13. Identity

- a. Identity with social roles
- b. Identity with organizations
- c. Identity with status levels

Computer Science

1. Systematize (Write an Algorithm / Process)
2. Exploration-Exploitation
3. Divide and Conquer (Split problem into pieces)
4. Premature Optimization

Books (As Frameworks)

1. Antifragile
 - a. Antifragility (Gains from volatility)
 - b. Payoffs thinking instead of probabilities thinking
 - c. Level of exposure to extreme events
 - d. Options (Short or long volatility)
2. Decisive
 - a. Search for Objective Data to Inform Decisions
 - b. Small Experiment / Ooch
 - c. What are the options that we're not considering?
 - d. What beliefs do I have that I should question?
 - e. What is the evidence that contradicts my beliefs?
 - f. What are the underlying desires guiding my decision?
 - g. Assume that some or all options are eliminated or required. What do we do?
 - h. What is the opportunity cost of this decision? (Opportunity Cost)
 - i. Can we reframe between prevention focus and promotion focus?
 - j. Who else had this problem, and how can we learn from them? (History)
 - k. What evidence, if witnessed, would change your mind?
 - l. When this went well, what was happening?
 - m. What was the close-up experience of people who made my decision in the past? (Inside View)
 - n. How will I feel about this decision in 5 minutes, in 4 months, in 3 years?

- o. Premortem - imagine this decision going horribly wrong and going extremely well. What caused it?
 - p. What is the courageous action? The imaginative action?
 - q. What would other people of different types do in my position? (Different person heuristic)
3. Getting to Yes
- a. Escape Ego Association (Positional Negotiation)
 - b. Separate the people from the problem
 - c. Escape to underlying interests, of which the positions are made
 - d. Invent Options for Mutual Gain
 - e. Use Objective Criteria
4. CFAR Manual
- a. Visualization over possible futures (similar to best state worst state)
 - b. Actually Try - OMG I need to do this all the time, it's huge
 - c. Murphyjitsu
 - d. Identify motivating urges
 - e. Identify aversive factors
 - f. Combine objective information with Value of Information
 - g. Inferential Distance (what knowledge is requisite)
 - h. Explain the problem in detail (to a duck)
 - i. Actually understand the problem
 - j. Intensity
 - k. Identify Bottleneck to problem solving
 - l. Obvious next step that needs to happen
 - m. Where did the problem go wrong? Did it happen earlier than expected?
 - n. Steel-Man each idea
 - o. Mindset check - are you looking for evidence for a particular option, or genuinely a scout
 - p. Physiology check - what's your psychological state?
 - q. City of Lights - separate yourself into different parts with different opinions
 - r. How can training occur naturally in behavior (deliberate performance)?
 - s. Overlearning - seeing an idea everywhere, immersion
 - t. Postmortem - when this has failed in the past, what happened?
 - u. Exposure Therapy
 - v. Fragment - break the problem into smaller pieces/chunks
 - w. Identity - Sociology
5. Poor Charlie's Almanac
- a. Specialization/Comparative Advantage
 - b. Law of Large Numbers / Poker-style optimal play, long term tends to theoretical values
 - c. Invert! Invert the question or the situation, try reversing everything.
 - d. Mean Regression
 - e. Backup System - All critical systems have a backup, avoid downside exposure

- f. Simplicity. Make as few decisions as possible, have few dependencies.
- g. Equilibrium
- h. Critical Mass
- i. Think at the Margin
- j. Scarcity
- k. Social Proof
- l. Consistency
- m. Reciprocation
- n. Risk/Loss/Uncertainty Aversion
- o. Positive Feedback
- p. Catalyst
- q. Compound Interest
- r. Tight/Aggressive approach to decisions
- s. Pareto Principle (80/20 rule)
- t. Man with a hammer syndrome
- u. Tragedy of the Commons
- v. No-Brainer / Do the obvious thing

Vincent pointed out that my frameworks list was actually a mix of frameworks and concepts. I'll try to break those two apart. For definitions, frameworks give me a model for how to reason about a system. Concepts give me a particular idea for how to behave or predict in a system.

I should wring these ideas out. Take a simple idea and take it seriously.

So what's the best plan for getting this current problem solving model into my head? And what ideas do I need to add to my framework?

This is an example of thinking systematically. It would be wonderful to generalize from every good thought that I have. I should also cross this with CFAR.

It seems like almost every potential new idea is a concept. Which is fine - most of thinking will likely be application of useful concepts.

Great application of this framework will be the combination of different concepts that interact in a way that delivers insight into how complex systems are working.

Great! Now I just need a system for getting concepts ingrained in system 1. I should apply this framework to that problem!

Relevant domains:

1. Math
2. Physics
3. Chemistry
4. Biology
5. Engineering
6. Psychology
7. Philosophy
8. History
9. Statistics
10. Economics

I need to blow this up and cut this down. Blowing this up means looking at all of the relevant frameworks. Cutting it down means trying things, finding out what's predictive and what's not, and then iterating. I want to move more ideas through the system, and I should probably cut fields down to manageable size and iterate over parts of them. I also need to stop letting the category of fields throw me off - there are a ton of ideas that don't nestle nicely into a particular space.

A new way to format this will open it up to new frameworks and concepts. I would love to integrate the models from a book as its own mini-algorithm worth running as a framework to process particular types of problem. In the cases where all of the methods advocated for in that book can be broken down into parts of this system, I can just call different parts of this more general framework in order.